

AMENDMENTS TO THE CLAIMS

1. (Cancelled)
2. (Cancelled)
3. (Cancelled)
4. (Cancelled)
5. (Cancelled)
6. (Cancelled)
7. (Cancelled)
8. (Cancelled)
9. (Cancelled)
10. (Cancelled)
11. (Cancelled)
12. (Cancelled)
13. (Cancelled)
14. (Cancelled)
15. (Cancelled)
16. (Cancelled)
17. (Currently-amended) The method of claim 19 4, wherein the method further comprises heating the portion of the tooth ~~a target region of the oral cavity~~.

18. (Currently-amended) The method of claim 17, wherein electromagnetic radiation having a second band second wavelength range of optical radiation is applied to heat the portion of the tooth target region of the oral cavity.
19. (Currently-amended) A method of whitening and brightening at least a portion of a tooth, comprising:
irradiating the portion of the tooth with electromagnetic radiation having at least one wavelength range corresponding to an absorption spectrum of a stain in the tooth, directly photobleaching a target region of the tooth with optical radiation having one or more wavelength components absorbable by at least one chromophore present in the tooth; and
~~heating the target region;~~
20. (Currently-amended) The method of claim 19, wherein said stain is an endogenous chromophore is in a staining residue.
21. (Currently-amended) The method of claim 19 20, wherein said ~~staining residue is present on the tooth surface~~ stain is present within enamel of the tooth.
22. (Currently-amended) The method of claim 19 20, wherein said stain staining residue is present within the tooth dentine.
23. (Currently-amended) The method of claim 19 20, wherein the stain has one or more components from the group of stains caused by coffee, tea, red wine, tannins, food pigments, tobacco, smoke particles, nicotine, poly-phenols and age-dependent tissue coloration; the wavelength band corresponds to the spectrum of tooth-staining substances selected from the group consisting of wine, coffee, tobacco-smoke residue and combinations thereof.
24. (Cancelled)
25. (Currently-amended) The method of claim ~~19~~ 17, wherein the step of heating further comprises delivering optical radiation to the portion of the tooth target region to provide heating.
26. (Cancelled)

27. (Currently-amended) The method of claim 19, ~~further comprising wherein the step of photobleaching further comprises applying an exogenous chromophore to the tooth and irradiating the exogenous chromophore photobleaching a target region of the tooth with optical electromagnetic radiation in a spectrum absorbed by the exogenous chromophore or endogenous photosensitizers present in said region.~~
28. (Currently-amended) The method of claim 19 27, ~~further comprising irradiating an wherein said endogenous photosensitizer is oxygen.~~
29. (Currently-amended) The method of claim 19 28, wherein said at least one wavelength range ~~spectrum~~ is selected from the group consisting in a range of any of about 560 nm - 600 nm, 610 nm - 650 nm, 740 nm - 780 nm, 1040 nm - 1080 nm, and or 1248 nm - 1288 nm.
30. (Currently-amended) The method of claim 28 24, wherein said endogenous photosensitizer is a photosensitizer selected from the group consisting of organic compounds and oxygen ~~chromophores are endogenous photosensitizers comprising organic molecules.~~
31. (Currently-amended) The method of claim 19 30, wherein the at least one wavelength range is substantially and wavelengths components are in a range of about 280 nm - 800 700 nm.
32. (Currently-amended) The method of claim 19, further comprising A method of whitening and brightening at least a portion of a tooth, comprising:

photoactivating an internal structure of the tooth to cause rejuvenation of said structure by applying optical radiation having one or more wavelength components absorbable by at least one chromophore present in the tooth: and

—— heating said portion of said tooth.
33. (Original) The method of claim 32, wherein said photoactivating step causes growth of new dentine in said tooth.

34. (Original) The method of claim 32, wherein said photoactivating step causes improvement in the enamel/dentine junction of said tooth.
35. (Cancelled)
36. (Cancelled)
37. (Cancelled)
38. (Cancelled)
39. (Cancelled)
40. (Cancelled)
41. (Cancelled)
42. (Cancelled)
43. (Currently-amended) The method of claim 19 4, wherein the dose of radiation applied to the chromophore during a single session ranges from about 0.06 J/cm^2 to about 30 J/cm^2 .
44. (Currently-amended) The method of claim 19 4, wherein a total dose of radiation applied to the chromophore during multiple sessions ranges from about 1 J/cm^2 to about 1000 J/cm^2 .
45. (New) The method of claim 19, further comprising irradiating the portion with electromagnetic radiation having a second wavelength range substantially between 300nm – 500 nm.
46. (New) The method of claim 19, further comprising photo-thermal bleaching the portion of the tooth by irradiating the portion with electromagnetic radiation having a second wavelength range suitable for heating the portion.

47. (New) The method of claim 46, wherein said second wavelength range is substantially one or more of the group of wavelength ranges consisting of 940 nm -980 nm, 1300 nm – 1600 nm, 1640 nm - 2140 nm, 2400 nm – 3200 nm and 9000 nm -12000 nm.
48. (New) The method of claim 46, wherein said second wavelength range is substantially between 1200 nm –12000 nm.
49. (New) The method of claim 19, wherein the electromagnetic radiation is irradiated at a power density of approximately 20 mW/cm².
50. (New) The method of claim 19, wherein the electromagnetic radiation is irradiated at a power density between approximately 1 mW/cm² and 100 W/cm².
51. (New) The method of claim 19, wherein the electromagnetic radiation is irradiated at a power density between approximately 10 mW/cm² and 10 W/cm².
52. (New) The method of claim 19, wherein the at least one wavelength range is approximately centered around the absorption spectrum of a stain in the tooth.